



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,303	03/18/2004	In-Hwan Oh	24317/83001	5789

7590 06/13/2005

Gergely T. Zimanyi
Agent for Applicant
SIDLEY AUSTIN BROWN & WOOD LLP
555 California Street, Suite 5000
San Francisco, CA 94104-1715

EXAMINER

RILEY, SHAWN

ART UNIT	PAPER NUMBER
----------	--------------

2838

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/803,303	OH, IN-HWAN	
	Examiner	Art Unit	
	Shawn Riley	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 march 2004 filing.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6,7 and 9-14 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. Applicant(s) is(are) reminded of the proper content of an abstract of the disclosure.

The abstract should not refer to purported merits (“can be operated efficiently”, “has a simpler transformer structure”) or speculative applications (“makes it possible to use low voltage integrated circuits in high voltage applications”) of the invention and should not compare the invention with the prior art.

Correction is required.

2. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "**A converter-controller is presented for controlling a converter**", "The disclosure describes," "What is disclosed", "The invention relates to", "Methods and apparatus are provided", "The present invention provides", "According to the invention", "The objective of the invention", or like phrases, etc. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 U.S.C. § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

Art Unit: 2838

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6-7, 9-11, 13-14 are rejected under 35 U.S.C. §102(b) as being fully anticipated by Shimizu (U.S. Patent 4,992,702). Shimizu et al shows,¹ (in, e.g., the(ir) figures and corresponding disclosure)

As to claim 1;

A converter-controller, operable to control a converter having a transformer (202), the transformer having a primary (202₁) and a secondary coil (202₂), the converter-controller comprising: a power device (302), coupled to the primary coil of the transformer; a resonant circuit (402/204/404), coupled to the primary coil and the power device; a voltage regulator (50₁), coupled to the resonant circuit; and a control logic (see, e.g., figure 2 and column 3 lines 18-26), coupled to the voltage regulator.

As to claim 6;

The converter-controller of claim 1, wherein the power device is one of a MOS-FET, a bipolar junction transistor (302 is a bipolar), and an insulated gate bipolar transistor.

¹ Note claims will be addressed individually and the material in parentheses are the examiner's annotated comments. Further unless needed for clarity reasons, recited limitation(s), will be annotated only upon their first occurrence. Annotated claims begin with the phrase "As to claim". Claims that are not annotated are seen as having already had the invention(s) addressed previously in an annotated claim. Bolded words/phrases indicate rejected material based 112 paragraph rejections. Underlined words/phrases indicate objected to material.

Art Unit: 2838

As to claim 7;

The converter-controller of claim 1, wherein: the control logic is coupled to a gate of the power device; and the control logic is operable (it turns the circuit on and off via an oscillator) to control an on/off time of the power device.

As to claim 9;

The converter-controller of claim 1, wherein the high voltage link (for examination purposes, the high voltage link is considered to be 204) is coupled to at least one of a DC source and a rectified AC source.

As to claim 10;

The converter-controller of claim 1, wherein: the central node (for examination purposes, the central node is assumed to be the connection point between 406/404/ and 402) of the resonant circuit is coupled to the high voltage link through a connecting diode (402); and the regulator resistor (for examination purposes the regulator resistor is assumed to be 408) is coupled to the high voltage link through a connecting resistor (406).

As to claim 11;

The converter-controller of claim 1, wherein: the secondary coil of the transformer is coupled to the control logic, operable to provide a feedback signal.

Art Unit: 2838

As to claim 13, for method claims, note that under MPEP 2112.02, the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986). Therefore the previous rejections based on the apparatus will not be repeated.

The method of operating a converter-controller, comprising a power device, coupled to a primary coil of a transformer of a converter, a resonant circuit, a voltage regulator, and a control logic, the method comprising: powering the control logic by the power device, the resonant circuit and the voltage regulator; and controlling, by the control logic, the length of switch-on and switch-off intervals of the power device, thereby controlling an output voltage of the converter.

As to claim 14;

The method of claim 1, wherein the converter is operated in one of a flyback mode and a forward mode (Shimizu et al. leave off designation of polarity on the transformer as a means to indicate that the converter may be implemented in either the flyback or forward mode of operation).

Claim Rejections - 35 U.S.C. § 103

3. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

4. Claim 12 is rejected under 35 U.S.C. § 103 as being unpatentable over Shimizu et al. (U.S. Patent 4,992m702). The Shimizu et al. reference discloses the limitations of the invention as claimed as described above. However, Shimizu et al. does not show feedback via a photodiode from the secondary but instead shows feedback from the primary via a direct connection. Official notice is taken that it would have been obvious at the time the invention was made to utilize feedback via a photodiode into the circuit of Shimizu et al. for the reason of providing an isolated feedback without need for additional protection measures to guard against situations such as over-voltage.

Allowable Subject Matter

5. Claims 2-5 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. As allowable subject matter has been indicated, applicant's response must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 C.F.R. § 1.111(b) and section 707.07(a) of the M.P.E.P.

7. The following is an examiner's statement of reasons for allowance: No prior art uncovered anticipates or renders obvious applicant(s) claimed converter-controller including a central node; a resonant capacitor, coupled between the central node and the power device; a resonant diode, having an anode and a cathode, the cathode of the resonant diode coupled to the central node; and a resonant inductor, coupled between the anode of resonant diode and a ground.

Further, no prior art uncovered anticipates or renders obvious applicant(s) claimed converter-controller including a regulator diode, having an anode and a cathode, the anode of the regulator diode coupled to the central node; a regulator resistor, coupled to the cathode of the regulator diode; a Zener diode, coupled between the regulator resistor and a ground; and a regulator capacitor, coupled in parallel to the Zener diode.


Conclusion

Any inquiry from other than the applicant/attorney of record concerning this communication or earlier communications from the Examiner should be directed to the Patent

Art Unit: 2838

Electronic Business Center (EBC) at 1.866.217.9197. Any inquiry from a member of the press concerning this communication or earlier communications from the Examiner or the application should be directed to the Office of Public Affairs at 703.305.8341. Any inquiry from the applicant or an attorney of record concerning this communication or earlier communications from the Examiner should be directed to Examiner Riley whose telephone number is 571.272.2083. The Examiner can normally be reached Monday through Thursday from 7:30-6:00 p.m. Eastern Standard Time. The Examiner's Supervisor is Mike Sherry who can be reached at 571.272.2084. Any inquiry about a case's location, retrieval of a case, or receipt of an amendment into a case or information regarding sent correspondence to a case **should be directed to 2800's Customer Service Center** at 571.272.2815. Any papers to be sent by fax MUST BE sent to fax number 703.872.9306. Any inquiry of a general nature of this application should be **directed to the Group receptionist** whose telephone number is 571.272.2800. Status information of cases may be found at <http://pair-direct.uspto.gov> wherein unpublished application information is found through private PAIR and published application information is found through public PAIR. Further help on using the PAIR system is available at 1.866.217.9197 (Electronic Business Center).

June 05



Shawn Riley
Primary Examiner